

Claims

1. An apparatus for stretching a weft thread (10) inserted into a weaving shed, in particular in an air-jet weaving machine, characterized in that a thread clamp (22) actuatable by means of a control unit (21) for clamping the weft thread (10) is provided, upstream of which - relative the weft thread transporting direction - a device (14, 23, 23', 23'') actuatable by means of said control unit (21) for deflecting the weft thread (10) is disposed.

2. The apparatus according to claim 1, characterized in that the thread clamp (22) and the device (23, 23', 23'') are disposed next to one another on the same side of the shed.

3. The apparatus according to claim 1 or 2, characterized in that at least one device (20) for detecting the motion of a weft thread (10) is provided, the signal of which is converted into actuation signals for the thread clamp (22) and the deflector device (14, 23, 23', 23'').

4. The apparatus according to claim 3, characterized in that a detector (20) of a rewinder (11) serves as the device for detecting the motion of the weft thread (10) which detects the number of windings of the weft thread (10) drawn off by each weft insertion.

5. The apparatus according to one of claims 1 through 4, characterized in that the magnitude of the deflection force of the device (14, 23, 23', 23'') for deflecting the weft thread (10) is adjustable, controllable or regulatable.

6. The apparatus according to one of claims 1 through 5, characterized in that the course of the deflection force of the device (14, 23, 23', 23'') for deflecting the weft thread is adjustable or regulatable.

7. The apparatus according to one of claims 1 through 6, characterized in that two or more deflector devices (14, 23, 23', 23'') are provided between a weft thread stopper (18) and the thread clamp (22).

8. The apparatus according to one of claims 1 through 7, characterized in that at least two devices (14, 23, 23') for deflecting the weft thread that are actuatable independently of each other are provided.

9. The apparatus according to one of claims 1 through 8, characterized in that the beginning and/or the end of the actuation of the thread clamp (22) is variable.

10. The apparatus according to one of claims 1 through 9, characterized in that the beginning and/or the end of the actuation of the device (14, 23, 23', 23'') for deflecting the weft thread (10) is variable.

11. The apparatus according to one of claims 1 through 10, characterized in that the thread clamp (22) and the device (14, 23, 23', 23'') for deflecting the weft thread are disposed on a sley of the weaving machine.

12. The apparatus according to claim 11, characterized in that the sley carries a reed (15) having a weft guide duct (16), and that the thread clamp (22) and the deflector device (14, 23, 23', 23'') are disposed along an extension of said weft guide duct.

13. The apparatus according to claim 12, characterized in that the elements (36, 37, 38, 36', 37', 42, 43) of the deflector device (14, 23, 23', 23'') and the elements (34, 35) of the thread clamp (22) are disposed, in their at-rest position, outside the boundary of the weft thread transport duct (16).

14. The apparatus according to one of claims 1 through 13, characterized in that the deflector device (23, 23', 23'') contains, as its actuating device, at least one pneumatic piston-cylinder unit (25, 25', 25'').

15. The apparatus according to claim 14, characterized in that the piston (36, 36', 41) of the piston-cylinder unit (25, 25', 25'') is drivable in both directions with compressed air.

16. The apparatus according to claim 14 or 15, characterized in that a device (33) for detecting the position of the piston (36) of the piston-cylinder unit (25) of the deflector device (23) is provided.

17. The apparatus according to one of claims 14 through 16, characterized in that means are provided which determine the level of the pressure and/or the variation over time of the pressure that is delivered to the piston-cylinder unit (25, 25', 25'') of the deflector device (23, 23', 23'').

18. The apparatus according to one of claims 14 through 17, characterized in that the piston-cylinder unit (25) of the deflector device (23) is connectable selectively via a switching valve (31) to at least two delivery lines for compressed air.

19. The apparatus according to one of claims 1 through 18, characterized in that a pneumatic piston-cylinder unit (24) is provided as the actuating device for the thread clamp (22).

20. The apparatus according to claim 19, characterized in that the piston (35) of the piston-cylinder unit (24) is drivable with compressed air in both directions.

21. A method for stretching a weft thread after its insertion into a weaving shed of a weaving machine, in particular an air-jet weaving machine, characterized in that the weft thread is clamped at least approximately at the end of the insertion on the side of the shed opposite the insertion side and is then maintained in tension by deflection until it is beaten up.

22. The method according to claim 21, characterized in that the weft thread is deflected with a force whose magnitude is controllable or regulatable.

23. The method according to claim 21 or 22, characterized in that the weft thread is deflected at a plurality of locations.